Description

TRAVEL MARKET BROKER SYSTEM

CROSS REFERENCE TO RELATED APPLICATIONS

[0001]   The present application claims priority to, and the benefit of, United States Non-Provisional Patent Application Serial No. 10/611,037 entitled "System and Method for Facilitating Transactions Among Consumers and Providers of Travel Services" filed June 30, 2003 (which itself claims the benefit of, and priority to U.S. Provisional Patent Application No. 60/428,062, entitled "Travel Information Distribution System And Method" and filed November 21, 2002, and U.S. Provisional Patent Application No. 60/428,443, entitled "Travel Information Distribution System And Method" and filed November 22, 2002; U.S. Non-provisional Patent Application No. 10/217,666, entitled "Integrated Travel Industry System" filed on August 12, 2002 (which itself claims the benefit of, and priority to, U.S. provisional Application Serial Number 60/314,404, filed August 23, 2001), and U.S. Non-provisional Patent Application No. 10/188,768, entitled "System And Method

For Airline Purchasing Program Management" filed on July 2, 2002), the entire contents of all are hereby incorporated by reference in their entirety.

FIELD OF INVENTION

[0002] The present invention generally relates to the travel industry. More specifically, the present invention relates to a travel market broker system that facilitates transactions among travel service suppliers and travel service buyers.

BACKGROUND OF INVENTION

[0003] The last half of the twentieth century, and particularly the last two decades, has been characterized by rapid changes in the travel industry. One example of the changes is the growth of the airline business that has resulted in the proliferation of travel agencies and other travel information groups that often access large volumes of data in a "real time" environment. This growth has led to many technological advancements in computer reservation systems (CRS), also known as Global Distribution Systems (GDS), for the travel industry. The terms Global Distribution System (GDS) and Computer Reservation System (CRS) will be used interchangeably herein. The GDS is a computer network that provides travel agents and other travel

information groups with inventory access related to hotel, condominium, rental car, airline and the like. Examples of such inventory systems include the SABRE system, Amadeus, Galileo/Apollo, System One, and Worldspan. Traditionally, travel agents use a computer that connects directly to a GDS company, such as SABRE or Apollo.

[0004] Unfortunately, a direct connection between the travel offices and the GDS typically created a reliance on the GDS, thereby resulting in traveler reservations that may not have been very cost efficient. Additional problems have often arisen due to the complexity and cost related to maintaining and updating hardware and software, especially on those systems where there are multiple GDS networks and desktop standards. In addition, there is often a lack of connectivity between travel offices that utilize different GDS systems or configurations due to the private autonomous nature of GDS networks. The autonomous nature of GDS networks lead to further inefficiencies such as the inability to deliver Internet access to the travel offices through the same system. Internet access is desired, as it would allow for the integration of traveler reservations with low cost inventories such as Internet fares and/ or connection with vendor direct inventory.

BRIEF DESCRIPTION OF DRAWINGS

[0005] A more complete understanding of the present invention may be derived by referring to the detailed description when considered in connection with the Figures, where like reference numbers refer to similar elements throughout the Figures, and:

[0006] FIG. 1 illustrates a schematic diagram of an exemplary travel market broker system in accordance with the present invention;

[0007] FIG. 2 illustrates a schematic diagram of an exemplary travel market broker system in accordance with the present invention;

[0008] FIG. 3 illustrates a schematic diagram of an exemplary network in accordance with the present invention; and

[0009] FIG. 4 illustrates a schematic diagram of exemplary databases in accordance with the present invention.

DETAILED DESCRIPTION

[0010] In general, the present invention provides for an integrated travel market broker system that includes a travel network that may be provided and managed by a single vendor (e.g., AT&T, British Telecom) that is particularly skilled in providing and servicing networks. In this man-

ner, a managed network can be provided for that is monitored, in an exemplary embodiment, 24 hours a day, 7 days a week thus providing a single or reduced point of contact for outages, and further providing for real time (or substantially real time) and historical reporting. In accordance with various aspects of the present invention, the travel market broker system may be divided into multiple sub-networks, where each sub-network may be managed by a single vendor that could vary over time or according to other criteria. That is, one sub-network may be managed by AT&T and another sub-network may be managed by British Telecom and the sub-networks may be connected together to form the travel network.

[0011] The present invention may be described herein in terms of functional block components, screen shots, optional selections and various processing steps. It should be appreciated that such functional blocks may be realized by any number of hardware and/or software components configured to perform the specified functions. For example, the present invention may employ various integrated circuit components, e.g., memory elements, processing elements, logic elements, look-up tables, and the like, which may carry out a variety of functions under the control of

one or more microprocessors or other control devices. Similarly, the software elements of the present invention may be implemented with any programming or scripting language such as C, C++, Java, COBOL, assembler, PERL, extensible markup language (XML), and Microsoft's Visual Studio .NET, with the various algorithms being implemented with any combination of data structures, objects, processes, routines or other programming elements. Further, it should be noted that the present invention might employ any number of conventional techniques for data transmission, signaling, data processing, network control, and the like. For a basic introduction of cryptography and network security, the following may be helpful references: (1) "Applied Cryptography: Protocols, Algorithms, And Source Code In C," by Bruce Schneier, published by John Wiley & Sons (second edition, 1996); (2) "Java Cryptography" by Jonathan Knudson, published by O'Reilly & Associates (1998); (3) "Cryptography & Network Security: Principles & Practice" by William Stalling, published by Prentice Hall; all of which are hereby incorporated by reference.

[0012] It should be appreciated that the particular implementations shown and described herein are illustrative of the invention and its best mode and are not intended to oth-

erwise limit the scope of the present invention in any way. Indeed, for the sake of brevity, conventional data networking, application development and other functional aspects of the systems (and components of the individual operating components of the systems) may not be described in detail herein. Furthermore, the connecting lines shown in the various figures contained herein are intended to represent exemplary functional relationships and/or physical couplings between the various elements. It should be noted that many alternative or additional functional relationships or physical connections may be present in a practical electronic transaction system.

[0013] As will be appreciated by one of ordinary skill in the art, the present invention may be embodied as a method, a data processing system, a device for data processing, and/or a computer program product. Accordingly, the present invention may take the form of an entirely software embodiment, an entirely hardware embodiment, or an embodiment combining aspects of both software and hardware. Furthermore, the present invention may take the form of a computer program product on a computer-readable storage medium having computer-readable program code means embodied in the storage medium. Any

suitable computer-readable storage medium may be utilized, including hard disks, CD-ROM, optical storage devices, magnetic storage devices, and/or the like.

[0014] The present invention is described herein with reference to screen shots, block diagrams and flowchart illustrations of methods, apparatus (e.g., systems), and computer program products according to various aspects of the invention. It will be understood that each functional block of the block diagrams and the flowchart illustrations, and combinations of functional blocks in the block diagrams and flowchart illustrations, respectively, can be implemented by computer program instructions. These computer program instructions may be loaded onto a general purpose computer, special purpose computer, or other programmable data processing apparatus to produce a machine, such that the instructions which execute on the computer or other programmable data processing apparatus create means for implementing the functions specified in the flowchart block or blocks.

[0015] These computer program instructions may also be stored in a computer-readable memory that can direct a computer or other programmable data processing apparatus to function in a particular manner, such that the instruc-

tions stored in the computer-readable memory produce an article of manufacture including instruction means which implement the function specified in the flowchart block or blocks. The computer program instructions may also be loaded onto a computer or other programmable data processing apparatus to cause a series of operational steps to be performed on the computer or other programmable apparatus to produce a computer-implemented process such that the instructions which execute on the computer or other programmable apparatus provide steps for implementing the functions specified in the flowchart block or blocks.

[0016] Accordingly, functional blocks of the block diagrams and flowchart illustrations support combinations of means for performing the specified functions, combinations of steps for performing the specified functions, and program instruction means for performing the specified functions. It will also be understood that each functional block of the block diagrams and flowchart illustrations, and combinations of functional blocks in the block diagrams and flowchart illustrations, can be implemented by either special purpose hardware-based computer systems which perform the specified functions or steps, or suitable com-

binations of special purpose hardware and computer in-
structions.

[0017] More particularly, the present invention facilitates the in-
tegration between travel offices, the Internet, Global Dis-
tribution Systems (GDS), alternate inventories (e.g., limou-
sine providers), vendor direct systems, and other reserva-
tion processing technologies (e.g., document delivery, file
finishing, trip planning) such that access to inventories
(e.g., low cost inventories) is provided to travel service
buyers and access to the travel service buyers is provided
to the travel service suppliers. The terms Global Distribu-
tion System (GDS) and Computer Reservation System (CRS)
will be used interchangeably herein. As stated above, the
GDS generally includes a computer network that provides
travel agents and other travel information groups with in-
ventory access related to hotel, condominium, rental car,
and airlines, and the like. Examples of such inventory sys-
tems include the SABRE system, Amadeus, Galileo/Apollo,
System One, and Worldspan.

[0018] Referring to Figure 1, the present invention presents an
integrated travel market broker system 100 that inte-
grates travel service suppliers and buyers in a manner that
is independent from a particular computer system, such

as a GDS system. This system facilitates substantial technology independence from, or limited dependence on, the GDSs, thereby achieving a network that is business driven, business responsive and enabling a company to become an industry leader. Travel service suppliers 145 may be any entity that has a legal right to sell travel services. This may include traditional suppliers such as name brand carriers, consolidators, and liquidators, as well as those suppliers who have purchased inventory, such as suppliers who have purchased inventory via a sponsored Travel Commodities Exchange system.

[0019] System 100 may include a host server or other computing systems including a processor for processing digital data, a memory coupled to said processor for storing digital data, an input digitizer coupled to the processor for inputting digital data, an application program stored in said memory and accessible by said processor for directing processing of digital data by said processor, a display coupled to the processor and memory for displaying information derived from digital data processed by said processor and a plurality of databases, said databases including client data, travel data, supplier data, merchant data, financial institution data and/or like data that could

be used in association with the present invention. As those skilled in the art will appreciate, user computer will typically include an operating system (e.g., Windows NT, 95/98/2000, Linux, Solaris, Windows XP, etc.) as well as various conventional support software and drivers typically associated with computers. User computer can be in a home or business environment with access to a network. In an exemplary embodiment, access is through the Internet through a commercially-available web-browser software package.

[0020] Communication between users 132 and system 100 of the present invention is accomplished through any suitable communication means, such as, for example, a telephone network, Intranet, Internet, point of interaction device (point of sale device, personal digital assistant, cellular phone, kiosk, etc.), online communications, off-line communications, wireless communications, and/or the like. One skilled in the art will also appreciate that, for security reasons, any databases, systems, or components of the present invention may consist of any combination of databases or components at a single location or at multiple locations, wherein each database or system includes any of various suitable security features, such as firewalls,

access codes, encryption, de-encryption, compression, decompression, and/or the like.

[0021] With continued reference to Figure 1, in accordance with an exemplary embodiment, travel market broker system 100 comprises a travel network 110, one or more GDS systems 120, and one or more multi-use point of service (POS) terminals 130 located at travel offices and other sites. The customer terminals may be located anywhere in the world and are connected to travel network 110 such that the users (i.e., travelers and travel counselors) of the terminals have access to GDS systems and other features of the system 100 as will be described in detail below. In addition, system 100 includes travel managers (i.e., travel service buyers) 135 and travel service suppliers 145.

[0022] Travel network 110 is further configured to provide access to Travel Booking Databases 144, Travel Market Broker Database 145, and to a plurality of travel vendors 150 such as airline databases, car and hotel databases, train and bus databases, frequent flyer systems (e.g., Orbit), and the like. In accordance with one aspect of the present invention, travel booking databases 144 include traveler profile database 146, passenger name record (PNR) Database 148, corporate negotiated programs database

152, and travel history data warehouse 154. This network enables a substantially open and substantially consistent vehicle for non-GDS communication such as e-mail, Internet and the like, which is, inter alia, less expensive and less complex than having to provide a separate network for non-GDS communications. It should be appreciated that providing access to the Internet will give e-mail access to POS terminal users of travel industry system 100. Specific information related to the protocols, standards, and application software utilized in connection with the Internet may not be discussed herein. For further information regarding such details, see, for example, Dilip Naik, Internet Standards and Protocols (1998); Java 2 Complete, various authors, (Sybex 1999); Deborah Ray and Eric Ray, Mastering HTML 4.0 (1997). Loshin, TCP/IP Clearly Explained (1997). All of these texts are hereby incorporated by reference.

[0023] Travel vendor databases 150 may include databases for travel related services such as airlines, car rental, hotel, train, bus, limousines, and any other travel related service. As used in the system of the present invention, a database may be any type of database, such as relational, hierarchical, object-oriented, and/or the like. Common database

products that may be used to implement the databases include DB2 by IBM (White Plains, NY), any of the database products available from Oracle Corporation (Redwood Shores, CA), Microsoft Access by Microsoft Corporation (Redmond, Washington), or any other database product. Database may be organized in any suitable manner, including as data tables or lookup tables. Association of certain data may be accomplished through any data association technique known and practiced in the art. For example, the association may be accomplished either manually or automatically. Automatic association techniques may include, for example, a database search, a database merge, GREP, AGREP, SQL, and/or the like. The association step may be accomplished by a database merge function, for example, using a "key field" in each of the manufacturer and retailer data tables. A "key field" partitions the database according to the high-level class of objects defined by the key field. For example, a certain class may be designated as a key field in both the first data table and the second data table, and the two data tables may then be merged on the basis of the class data in the key field. In this embodiment, the data corresponding to the key field in each of the merged data tables is preferably the

same. However, data tables having similar, though not identical, data in the key fields may also be merged by using AGREP, for example.

[0024] In accordance with one aspect of the present invention, any suitable data storage technique may be utilized to store data without a standard format. Data sets may be stored using any suitable technique, including, for example, storing individual files using an ISO/IEC 7816-4 file structure; implementing a domain whereby a dedicated file is selected that exposes one or more elementary files containing one or more data sets; using data sets stored in individual files using a hierarchical filing system; data sets stored as records in a single file (including compression, SQL accessible, hashed via one or more keys, numeric, alphabetical by first tuple, etc.); block of binary (BLOB); stored as ungrouped data elements encoded using ISO/IEC 7816-6 data elements; stored as ungrouped data elements encoded using ISO/IEC Abstract Syntax Notation (ASN.1) as in ISO/IEC 8824 and 8825; and/or other proprietary techniques that may include fractal compression methods, image compression methods, etc.

[0025] In one exemplary embodiment, the ability to store a wide variety of information in different formats is facilitated by

storing the information as a Block of Binary (BLOB). Thus, any binary information can be stored in a storage space associated with a data set. As discussed above, the binary information may be stored on the financial transaction instrument or external to but affiliated with the financial transaction instrument. The BLOB method may store data sets as ungrouped data elements formatted as a block of binary via a fixed memory offset using either fixed storage allocation, circular queue techniques, or best practices with respect to memory management (e.g., paged memory, least recently used, etc.). By using BLOB methods, the ability to store various data sets that have different formats facilitates the storage of data associated with the financial transaction instrument by multiple and unrelated owners of the data sets. For example, a first data set which may be stored may be provided by a first issuer, a second data set which may be stored may be provided by an unrelated second issuer, and yet a third data set which may be stored, may be provided by an third issuer unrelated to the first and second issuer. Each of these three exemplary data sets may contain different information that is stored using different data storage formats and/or techniques. Further, each data set may contain subsets of

data which also may be distinct from other subsets.

[0026] As stated above, in various embodiments of the present invention, the data can be stored without regard to a common format. However, in one exemplary embodiment of the present invention, the data set (e.g., BLOB) may be annotated in a standard manner when provided for manipulating the data onto the financial transaction instrument. The annotation may comprise a short header, trailer, or other appropriate indicator related to each data set that is configured to convey information useful in managing the various data sets. For example, the annotation may be called a "condition header", "header", "trailer", or "status", herein, and may comprise an indication of the status of the data set or may include an identifier correlated to a specific issuer or owner of the data. In one example, the first three bytes of each data set BLOB may be configured or configurable to indicate the status of that particular data set; e.g., LOADED, INITIALIZED, READY, BLOCKED, REMOVABLE, or DELETED. Subsequent bytes of data may be used to indicate for example, the identity of the issuer, user, transaction/membership account identifier or the like. Each of these condition annotations are further discussed herein.

[0027] The data set annotation may also be used for other types of status information as well as various other purposes. For example, the data set annotation may include security information establishing access levels. The access levels may, for example, be configured to permit only certain individuals, levels of employees, companies, or other entities to access data sets, or to permit access to specific data sets based on the transaction, merchant, issuer, user or the like. Furthermore, the security information may restrict/permit only certain actions such as accessing, modifying, and/or deleting data sets. In one example, the data set annotation indicates that only the data set owner or the user are permitted to delete a data set, various identified merchants are permitted to access the data set for reading, and others are altogether excluded from accessing the data set. However, other access restriction parameters may also be used allowing various entities to access a data set with various permission levels as appropriate.

[0028] The data, including the header or trailer may be received by a stand alone interaction device configured to add, delete, modify, or augment the data in accordance with the header or trailer. As such, in one embodiment, the header or trailer is not stored on the transaction device

along with the associated issuer-owned data but instead the appropriate action may be taken by providing to the transaction instrument user at the stand alone device, the appropriate option for the action to be taken. The present invention may contemplate a data storage arrangement wherein the header or trailer, or header or trailer history, of the data is stored on the transaction instrument in relation to the appropriate data.

[0029] With continued reference to Figure 1, users 132, travel managers 135, and travel inventory suppliers 145 may be connected directly to network 110, such that the external customers have direct access to the travel network. In this manner, users 130, travel managers 135, and travel inventory suppliers 145 may access various features of the system as described below.

[0030] In accordance with one embodiment of the present invention, travel market broker system 100 may provide a suitable website or other Internet-based graphical user interface which is accessible by users 130, travel managers 135, and travel inventory suppliers 145 and other users of the system. Travel inventory suppliers 145 may qualify and register for participation in travel market broker system 100. In addition, travel inventory suppliers 145 may

terminate participation in the system. In one embodiment, the Internet Information Server, Microsoft Transaction Server, and Microsoft SQL Server, are used in conjunction with the Microsoft operating system, Microsoft NT web server software, a Microsoft SQL database system, and a Microsoft Commerce Server. Additionally, components such as Access Sequel Server, Oracle, MySQL, Intervase, etc., may be used to provide an ADO-compliant database management system. The term "webpage" as it is used herein is not meant to limit the type of documents and applications that might be used to interact with the user. For example, a typical website might include, in addition to standard HTML documents, various forms, Java applets, Javascript, active server pages (ASP), common gateway interface scripts (CGI), extensible markup language (XML), dynamic HTML, cascading style sheets (CSS), helper applications, plug-ins, and the like.

[0031] With reference to Figure 2, in an exemplary embodiment, various components of travel industry system 100 are connected to network 110 such that a centralized connection to network 110 is obtained. For example, GDS systems 120, travel vendors 150, and multi-use terminals 130 at travel offices 200 and other sites may be centrally

connected to network 110 such that users of the multi-use terminals have access to various components of system 100 such as GDS systems 120 and travel vendor databases 150.

[0032] Referring now to Figure 3, travel market broker system 110, in an exemplary embodiment, comprises a frame relay network having one or more hub sites 300 that are used to connect travel offices and other users from around the world. As is well known in the art, frame relay networks are a type of network that is used to transport data from location to location using connections, such as network components 310, which may comprise a router or equivalent network device. For example, as illustrated in Figure 3, there may be travel offices 310 in New York, Phoenix, Los Angeles, Rome, London, and Paris. Travel network 110 provides an integrated network such that any travel office in any city can communicate with any other travel office in any city which will allow for more efficient communication and distribution of information. For example, memos and other information can now be distributed electronically utilizing travel network 110, thus saving time and money compared to previous systems where a travel office could not communicate electronically

with another travel office that was utilizing a different GDS system. It will be appreciated that these locations 300 are for exemplary purposes only, and that the present invention is not limited to these locations.

[0033] Travel network 110 may use an Asynchronous Transfer Mode (ATM) backbone and multiple redundant data centers. For example, as illustrated in Figure 3, network 110 may include two hub sites 300 that provide for data redundancy as will be described. Alternatively, network 110 may comprise one hub site or network 110 may comprise more than two hub sites. Data and connectivity redundancy is provided for, in one embodiment, when there are two or more hub sites 300. Alternatively, travel network 110 may comprise any other suitable network that provides similar functionality to a frame relay network.

[0034] Hub sites 300 may be connected to each other by network connection 320. In accordance with one aspect of the present invention, network connection 320 may comprise an ATM backbone. Alternatively, network connection 320 may comprise a different type of network connection such as a T1 connection.

[0035] In an exemplary embodiment, one or more GDSs 120 are connected to network 110 at each of the hub sites 300. By

connecting GDS 120 to the network at hub sites 300, the system provides for a centralized point of contact with all GDSs, as opposed to maintaining separate networks for each GDS. If one of the hub sites is disabled or connectivity to one of the hub sites is otherwise lost, then GDS 120 will still be accessible through one of the other hub sites 300.

[0036] Travel vendor databases 150 may also be connected to network 110 at each of the hub sites 300, thus providing redundant connectivity points for the travel vendors. By centralizing the connection to travel vendors 150, the system of the present invention allows a company to negotiate directly with air, car rental, hotel vendors, and the like, based on direct connections and fulfillment options, wherein connection is not limited only through GDS hosts. Direct connections to various vendor databases (e.g., air, car rental, hotel, rail, limousines, cruise lines, conference centers, ferries) make it possible for travelers to have a broader range of travel service choices. In this manner, access is provided to various low cost carriers including web fares, discounters and consolidators. The present invention also allows alternative supply and distribution channels for products and services which may be provided

by plugging a vendor directly into network 110.

[0037] Adding or removing GDS or travel vendor databases from the system is accomplished by adding or removing connections to the GDS and/or travel vendor database at hub sites 300. In this manner, it is not necessary to add or remove hardware equipment or software applications at the individual travel office. The present invention provides for a central connection to all vendors. Clients of the system can change or add GDS vendors without the need to add or replace hardware. In an exemplary embodiment of the present invention, the system includes minimal or no GDS-supplied hardware and allows a company to respond to technology or product improvements with minimal or no GDS approval thus providing for a host independent of individual GDSs.

[0038] The system will also allow for load leveling with GDSs to meet minimum contractual transaction amounts.For example, the particular GDS accessed by the travel counselor can be manipulated such that travel transactions can be moved around from GDS to GDS in order to meet minimum transaction amounts. This can be accomplished by changing the GDS accessed by the travel counselor (this is transparent to the travel counselor).

[0039] In addition, if a new travel office is to be deployed, the travel office needs only to be connected to network 110 as will be described below. This allows for a short time to market for a new travel office. More particularly, each travel office may have one or more customer terminals 130 that provide user access to the system 100 through network component 310. In accordance with one aspect of the present invention, network components 310 are connected to hub sites 300 by network connections 330. Network connection 300 may be any type of suitable network connection such as T1, ATM, ISDN, and the like. Customer terminals 130 will have access to the various GDSs and travel vendor databases through hub sites 300. The multi-use terminals 130 may be used to provide a single source for accessing multiple GDSs and travel vendor databases for users (e.g., travel counselors). These multi-use terminals provide travel counselors with a new user-friendly, browser based Point of Service tool (a.k.a. Customer Information Gateway) that can be used for servicing customers as described in detail below. Travel counselors will only need to be trained on a single computer user interface/software application in order to be able to access a plurality of GDSs and travel vendor databases.Stated an-

other way, multi-use terminal 130 will be operated the same or similar way, no matter which GDS is accessed. In this manner, the customer terminals 130 of the system provide for a user-friendly operation (travel counselors will need little or no GDS format skills) and a customer focused reservation process with minimal or no restrictions by GDS limitations.

[0040] If one of the hub sites is disabled, customer terminal 130 may be automatically connected to another hub site 300 that is active via network connections 330 and 320, thus providing continuous network connection for the travel office and their customer terminals.

[0041] It will be appreciated that many applications of the present invention could be formulated. One skilled in the art will appreciate that network 110 may interface with any system for exchanging data or transacting business, such as the Internet, an intranet, an extranet, WAN, LAN, satellite communications, and/or the like. The users may interact with the system via any input device such as a keyboard, mouse, kiosk, personal digital assistant, hand-held computer (e.g., Palm Pilot®), cellular phone and/or the like. Similarly, the invention could be used in conjunction with any type of personal computer, network com-

puter, workstation, minicomputer, mainframe, or the like running any operating system such as any version of Windows, Windows NT, Windows2000, Windows 98, Windows 95, MacOS, OS/2, BeOS, Linux, UNIX, Solaris, Windows XP, or the like. Moreover, although the invention is frequently described herein as being implemented with TCP/IP communications protocols, it will be readily understood that the invention could also be implemented using IPX, Appletalk, IP-6, NetBIOS, OSI or any number of existing or future protocols. Moreover, the system contemplates the use, sale or distribution of any goods, services or information over any network having similar functionality described herein.

[0042] Referring now to Figure 4, databases 144 provide substantially private, secure, and confidential storage of all travel data including traveler data, corporate client data, and the Market Information Data Tape (MIDT). Databases 144 include traveler market broker database 145, traveler profile database 146, PNR database 148, corporate negotiated programs database 152, and travel history data warehouse 154. Travel service suppliers 145 may post and edit inventory in the travel market broker database 145. The posted inventory may include information con-

cerning dates and time, geographic location, quantity, price ranges, amenities, restrictions and other relevant information. The inventory may be viewed by travel service buyers 135 who may browse and perform queries on the inventory using a user interface 138.

[0043] Travel service buyers 135 may access traveler history data warehouse 154 to obtain current information on traveler's future travel plans such as volume of travel, destinations, dates, times, carriers, cost, and other travel itinerary details. Travel service buyers 135 may use this information to place orders to suppliers in order to reduce travel cost and get better deals. The orders may include details such as date and time range of travel, geographic location, quantity, price range, required minimum difference between price and the corporate negotiated price, desired amenities, and other trip requirements. Travel service suppliers 145 may then place bids for the orders in a reverse auction fashion. The travel service suppliers" bids may be "opaque" such that competitors and current customers cannot see the bid. This will allow suppliers to discretely unload inventory at lower prices than available through their retail channels and without drawing attention from competitors or current customers. The suppliers

may not be able to view the responses of their competitors. The travel service suppliers may configure alerts for types of orders that are desired to be acted upon. In addition, a matching function may be provided that determines which previously posted inventory or returned bids satisfy a placed order and returns the results to the travel service buyer for final selection and approval.

[0044] In addition, travel service suppliers may form a cooperative or otherwise pool travel service orders within their corporation in order to seek volume discounts from suppliers.

[0045] MIS reports may be obtained from the traveler history data warehouse 154 that detail past traveler travel history per corporate client such as city-pairs, date and time of travel, suppliers used, length of stay, trend analysis and the like. This information could be sold to the travel customer to assist with negotiating discount rates with their frequently used travel service suppliers. Additional MIS reports may be obtained from the travel market broker database 145 that detail the activity for a travel service supplier's account.

[0046] In the foregoing specification, the invention has been described with reference to specific embodiments. However,

it will be appreciated that various modifications and changes can be made without departing from the scope of the present invention. The specification and figures are to be regarded in an illustrative manner, rather than a restrictive one, and all such modifications are intended to be included within the scope of present invention. For example, the steps recited in any of the method or process claims may be executed in any order and are not limited to the order presented.

[0047] Benefits, other advantages, and solutions to problems have been described above with regard to specific embodiments. However, the benefits, advantages, solutions to problems, and any element(s) that may cause any benefit, advantage, or solution to occur or become more pronounced are not to be construed as critical, required, or essential features or elements of any or all the claims. As used herein, the terms "comprises", "comprising", or any other variation thereof, are intended to cover a non-exclusive inclusion, such that a process, method, article, or apparatus that comprises a list of elements does not include only those elements but may include other elements not expressly listed or inherent to such process, method, article, or apparatus. Further, no element de-

scribed herein is required for the practice of the invention unless expressly described as "essential" or "critical".